



API Integration - Assignment

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Integrating Google ML-Kit in Android for Face Detection

We have developed an android app for Live Face Detection. In this app we have three main functionalities.

The first one is live face detection, we have provided the option in the setting where user can enable and disable these following functions of the live face detection:

- Draw detected face bounds,
- Draw face contours,
- Draw eyes contours,
- Save cropped detected face in internal storage,
- and blinking eye detection.

The second functionality is to register for Authentication, its more like login Authentication using Face detection. The user will give his name and then camera will be open to scan the face, once scan is done correctly, app will inform user that the user has been registered successfully.

And the third functionality is to authenticate/login using face detection through the information we provided in the registration.

Integration:

Integrate Google ML-Kit SDK in Android in Gradle build (app level).

```
implementation "com.google.mlkit:face-detection:16.1.5"
```

We have also used cameraX library of android and advance Maths library for computing.

CameraX:

```
def camerax_version = "1.1.0-beta01"
implementation "androidx.camera:camera-core:${camerax_version}"
implementation "androidx.camera:camera-camera2:${camerax_version}"
implementation "androidx.camera:camera-lifecycle:${camerax_version}"
implementation "androidx.camera:camera-video:${camerax_version}"

implementation "androidx.camera:camera-view:${camerax_version}"
implementation "androidx.camera:camera-extensions:${camerax_version}"
```

Maths Library:

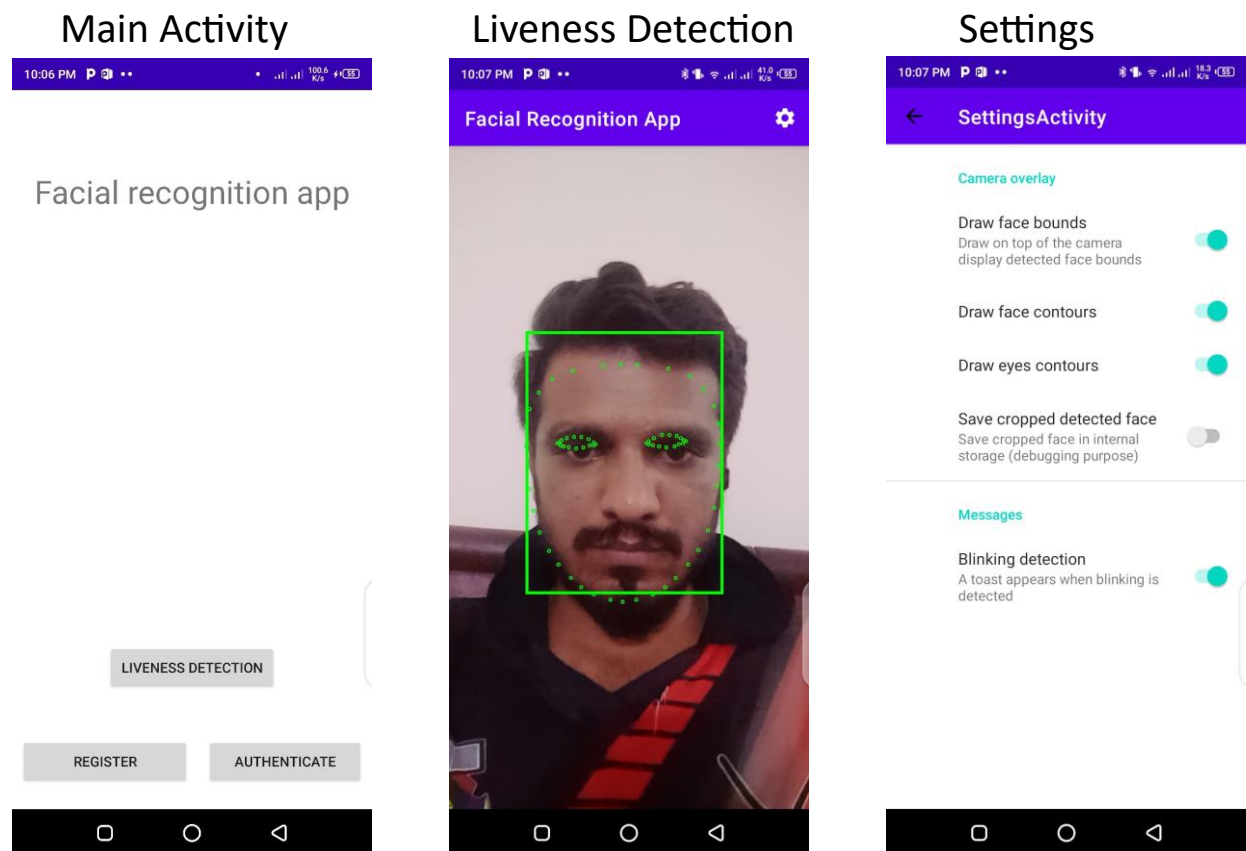
```
implementation files('libs\\Catalano.Android.Image.jar')
implementation files('libs\\Catalano.Core.jar')
implementation files('libs\\Catalano.Math.jar')
implementation files('libs\\Catalano.Statistics.jar')
```

The implementation code files can be found here:

<https://github.com/sarmadalij/Facial-Recognition-App>

Working of App:

Workflow Left to Right:



Register name



Enter your name to register..

CONTINUE



Authenticate name



Enter your name to authenticate..

CONTINUE



Name enter



sarmad

CONTINUE



Enter name



sarmad

CONTINUE



Registration



Facial recognition app



sarmad has been added

LIVENESS DETECTION

REGISTER

AUTHENTICATE



Authentication



Facial recognition app



Successful authentication!

LIVENESS DETECTION

REGISTER

AUTHENTICATE



The End